



December 2011

ROUNDTABLE

The Denver Radio Club Newsletter

Since 1917



PRESIDENT'S MESSAGE

By Bryan Steinberg – KB0A

As we finish out 2011 let's look back on all the activities and advances the Denver Radio Club has accomplished.

- We've had a great and successful Field Day with a record turnout.
- Installed a new repeater at the St. Anthony Hospital site in Lakewood.
- Made progress on the long awaited repeater voter system with the first remote site.
- Held another Hamfest with a sellout of our tables and record attendance.

Wow, what a year! And, I know there is more in store for 2012.

As you relax during the holidays, I would like for you to think about how you would like to contribute to our club, whether it is a presentation at a club meeting or Elmer session, or an article for this RoundTable. We also need people to get involved in the technical aspects of the club. So, if you are interested, or think you might be interested in learning more about repeaters, controllers, antennas or even tower climbing, speak up. We can always use more help in these critical areas. And, don't worry if you think you don't know enough. You probably know more than you think, you're a licensed Amateur after all, and we have great people who are willing to teach you. It's not very often you can get training at this level for free! So, please think about it and contact me or one of our other club officers, committee chairs or board members and let us know what your interest is.

Thanks to Steve, KFØRW and Paul, WA2YZT for putting together the show and tell on the new MotoTRBO repeater system. And remember that this month is our annual Holiday Meeting which will be held in place of our regular face-2-face meeting on December 21st. Also, please remember that there is a venue change for our meeting this year. **We are holding the holiday meeting at the Golden Corral at 3677 S. Santa Fe Dr. in Sheridan, CO., (303)643-5898.** The restaurant is located in the River Point shopping complex on the Southwest corner of the Santa Fe and Hampden intersection. Here's the link to a Google map >> <http://g.co/maps/n62dj> and you can find additional information on our web page, <http://www.w0tx.org>. Our presentation this month will be on a DXpedition to Zimbabwe and South Africa by Roger Krautkremer, KØYY. More info on the presentation and Roger can be found in this issue of the RoundTable. We will have lots of door prizes to give away at the meeting. By the way, family members and friends are welcome to attend the meeting. (Actually they are welcome to attend any of our meetings) But, we try to choose a presenter and topic a little less technical and of broader interest than at our regular meeting. Needless to say there will be no Elmer or Technical meetings this month. See you on the 21st.

Until next month...

Bryan – KB0A
President



INSIDE THE ROUND TABLE

November Meeting - What'd I Miss	Pg 2	Propagation Charts	Pg 7
Tech Committee Report	Pg 2	Up Coming Events & Calendar	Pg 8
Safe Wi-Fi Computing – Part 3	Pg 3	DRC Information	Pg 9

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W0TX

<http://www.w0tx.org>

NOVEMBER MEETING - WHAT'D I MISS

By Bill – W6OAV

There were 45 attendees this month. Bryan, KB0A, began the meeting by announcing the new DRC Christmas party location and the guest speaker's subject. After attendee introductions, Bob, KB0BZZ, gave an overview of last week's Salvation Army emergency exercise and handed out certificates of appreciation to the participants.

The meeting was then turned the guest speakers, Steve, KF0RW, and Paul, WA2YZT. They covered the following topics:

- **Events that occurred during the MotoTRBO FCC legalization process.**
- **The MotoTRBO repeater locations and the MotoTRBO networks.**
- **TDMA TRBO technology vs. FDMA (NexEdge) technology.**
- **MotoTRBO verses D-Star.**
- **Overview of the MotoTRBO communications structure verses analog communications structures.**
- **Programming and upgrading the radios.**
- **Features of the various radio models.**
- **Capabilities offered by the radios and the networks.**



After the presentation, Steve and Paul activated a MotoTRBO repeater in the meeting room and passed out several handhelds to demonstrate the various system features.

DECEMBER MEETING ANNOUNCEMENT

By Bryan – KB0A

DXPEDITION TO ZIMBABWE

Our holiday meeting presentation will be given by Roger Krautkremer, KØYY documenting the trip he and his wife, Marilyn, KBØLJW, took to Africa earlier this year. His presentation includes photographs of visit to sites in South Africa and Zimbabwe. While in Zimbabwe, Roger had the chance to operate in holiday mode as Z2/KØYY from the QTH of his friend Fernando, Z21BB. This is a great presentation that will be interesting to all in attendance.

Roger was first license in 1957 as KNØPYM and has operated DC from several foreign countries in addition to Zimbabwe. He has confirmed 260 countries on his DXCC. Roger is also a ARRL VE and part of the Jefferson County ARES and Alpine Rescue teams.

TECHNICAL COMMITTEE REPORT

By Bill – W6OAV

This report provides an overview of the items discussed during the November Technical Committee meeting. Items in black were the agenda items. Red are remarks to the agenda items.

Voter System

Goal: Design, build and test a 147.33 MHz voter system consisting of a central voter site and one remote site (Phase 1):

- Phase 1 Items to be completed as time permits:
 - Adjust UHF link transmit antenna - KB0A will use his analyzer to check the receive antenna system. **Still scheduled.**
 - Sync the hang times of Station 4 and the remote - KB0A reprogrammed the remote transmitter which N1ETV has reinstalled. **Appears to be working properly. More testing will be done.**
 - Calibrate the local and remote audio levels and responses - KB0A will use the IFR to set levels. **Still scheduled.**
- Phase 2 initial items:
 - Determine the transmitter's coverage areas and "dead zones" for possible remote sites:
 - Use Splat to identify the "dead zones".
 - KB0A, KB0MPX and N0LAJ will evaluate the Splat application to determine if it is viable for our use. Skype conference with the group to be scheduled to discuss the evaluations.

ST. Anthony Repeater

Goal: Improve coverage:

- Inspect physical antenna for proper installation. If ok, either raise the current antenna or replace it with an omni:
 - WW0LF has built the necessary coax jumper.
 - K0HTX will supply the necessary ladder(s) - The antenna base is 32' above the roof.
 - KB0A and WW0LF will determine the maximum length of ladder that can be carried on the elevator or up the stairs.
- Tech committee members will record the present signal strength for benchmarking after the antenna is raised. **Still in progress.**

Goal: Adjust transmitted PL tone level. Some Tone Squelch receivers experience dropouts.

- WW0LF measured the PL tone deviation to be 600 Hz, the proper amount. Perhaps problem caused by phase distortion in the received signal. **Closing this item.**

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Noise at Station 4

Goal: Reduce the power line noise affecting all systems:

- **WWOLF has identified the pole causing the problem. He will get Xcel to generate a work order to resolve the noise issue.**

New MotoTRBO Repeater

Goal: Build a new MotoTRBO repeater:

- Due to notification that digital repeater frequencies are going fast, KB0A has submitted a Request for Coordination (RSE) to the CCARC for a pair of MotoTRBO frequencies to be used by the club. The RSE has specified the St. Anthony Hospital campus as the site.
- Develop a project plan. **Waiting to see club members' feelings after seeing the MotoTRBO presentation at the November club meeting.**

TS-940 Failure

Goal: Determine if re-soldering and cleaning connectors will fix radio:

- **K0TOR has re-soldered many bad connections, replaced several bad solid state devices and reset the erratic CPU. He is now troubleshooting the built in automatic tuner.**

Additional Items

- W0GV is working to acquire a door key for the Hudson site. **Still in progress.**
- W0GV is working with the Rocky Mountain Ham group to keep the status of their 3 GHz data backbone system available to the Tech Committee. **W0GV will be the interface between the DRC and the Rocky Mountain Ham group.**
- WWOLF is looking at the feasibility of using a surplus Harris Marine HF radio for the 20 meter side of the club packet gateway. **Not feasible as the radio will not go higher than 10 MHz. Closing this item.**

FROM THE MEMBERSHIP CHAIRMAN

By Bob – KC0CZ

We are attempting to issue a new roster for the membership of the Denver Radio Club. I sent an email message earlier this month showing current membership information and asking for updates. The current membership information included name, license and expiration, spouse (if listed), address, home phone, work phone, and packet address (if used). Due to some unknown issues with Microsoft Office Access and Outlook, I am only able to generate 135 email messages to be sent. Therefore, I know that 60 or so people did not receive the email requesting updates for the roster. If you did not receive the roster update email message, please send any updates to membership@w0tx.org as soon as you can. If you did receive the email and have not yet responded, please do so. I have received about 50 updates so far. The goal is to have the updated information, have it printed and available for the December Holiday Dinner Meeting, December 21, 2011. Sorry for any inconvenience.

SAFE WI-FI COMPUTING PART 3

By Bill – W6OAV

HOTSPOT SECURITY

As mentioned earlier in this document, Wi-Fi hotspots are considered “war zones” where the enemy is hackers waiting to attack a user’s station. Part 3 of this document discusses configuring a Windows 7 station for secure hotspot operation. Part 4 will discuss configuring a Windows XP station for secure hotspot operation. A lot of the following information also pertains to using these operating systems on home Wi-Fi network. Depending on how your computer is configured, your screens may be a bit different than those shown below. If so, the following will serve as a guide for configuring your system. The reader might want to review the acronym definitions contained in the introduction to this document.

Configuring and using Windows 7 in hotspots.

When a user begins the Wi-Fi connection process, Windows 7 gives the user a choice of using a private or a public profile. The private profile is for use on a private Wi-Fi network and the public profile is for use on a hotspot Wi-Fi network. Using a public profile automatically tightens up the firewall security settings.

Before enabling the station’s Wi-Fi for hotspot use, the user needs to insure that the options are set in the public profile which disables file sharing and makes the station invisible to other stations on the hotspot Wi-Fi network. This aids in preventing hackers from attacking the station.

Also, the user must disable Automatic Connects to all but the home network contained in the station’s Wi-Fi Profile List. Disabling Auto Connects prevents the station from automatically connecting to a bogus hotspot network. For example, a hacker at a hotspot may be emulating an AP and beaconing as several common networks, such as Starbucks, Barnes and Noble, Free Wi-Fi, etc. Should one of these networks be in the station’s Profile List, and set for Auto Connects, the station may connect to the bogus network. The user may not be aware of the bogus connection. Also, even if the station user connects to a valid hotspot Wi-Fi network, a hacker can force the station to disconnect and reconnect to his bogus network if Automatic Connects has not been disabled. This feature, called Roaming, was discussed in Part 1 of this document. Roaming allows a station to automatically connect to another network if contact is lost with the original network.

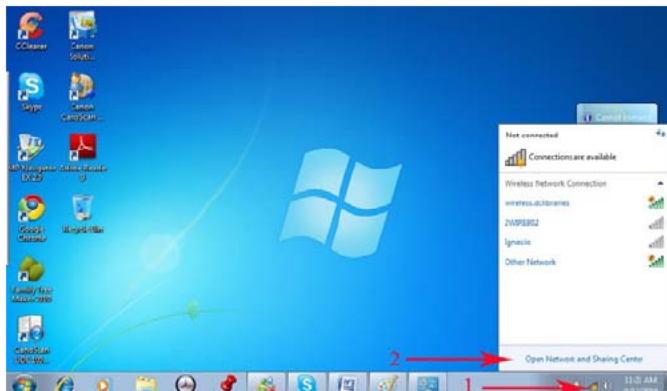
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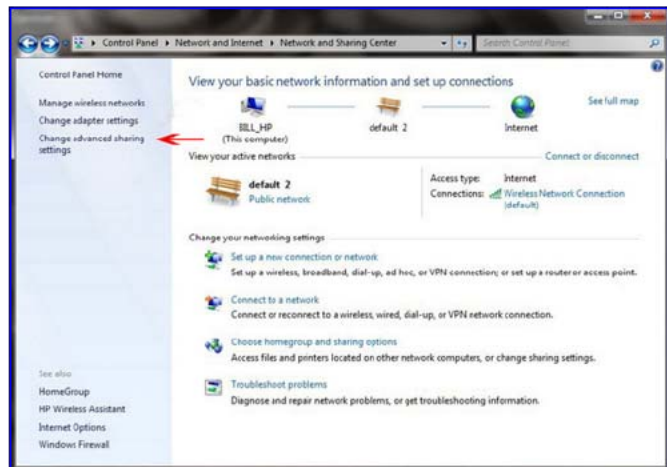
Disabling File Sharing and making the station invisible.

To configure the public profile to disable file sharing and to make the station invisible to other hotspot stations perform the steps below.

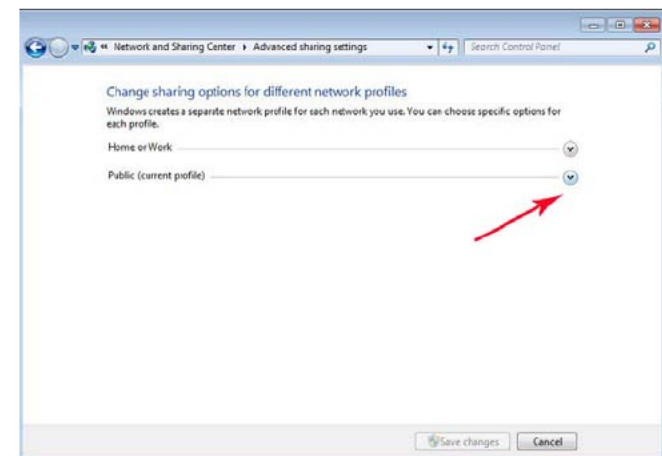
Step 1 - On the desktop, click the Wi-Fi icon. Then click "Open Network and Sharing Center".



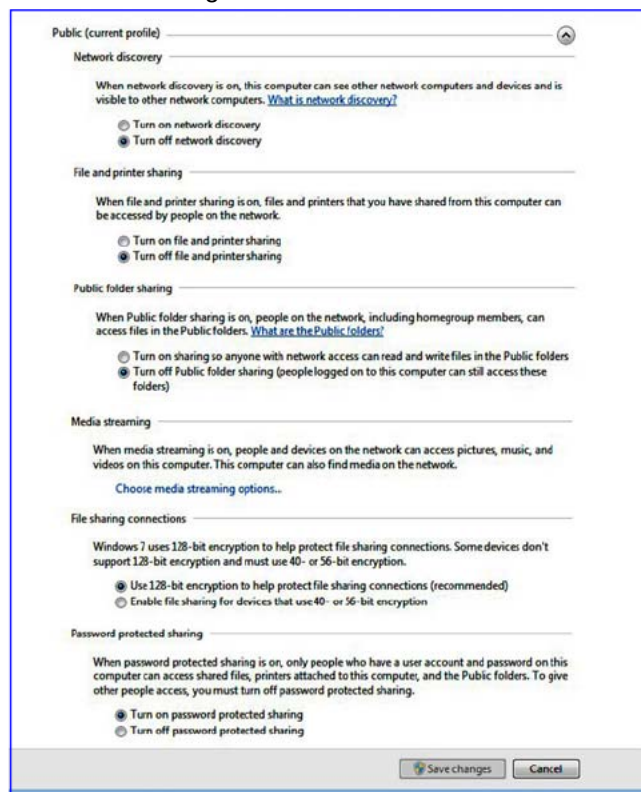
Step 2 - Click on "Change Advanced Sharing Settings".



Step 3 - Click the "Public Profile" drop down button.



Step 4 - Click the profile items as shown below and click "Save Changes"



The following describes the parameters that are disabled when configured as shown.

- **Network Discovery – OFF**
This parameter prevents the station from connecting to other stations (ad-hoc) and allowing the station only to connect to an AP.
- **File and Printer Sharing – Off**
This parameter prevents users on the internet from accessing these files.
- **Public File Sharing – OFF**
This parameter prevents users on the internet from accessing these files.
- **Password Protected Sharing – OFF**
This parameter prevents other users from accessing shared files.

New December Meeting & Party location go to [WWW.W0TX.org](http://www.w0tx.org) for more info.

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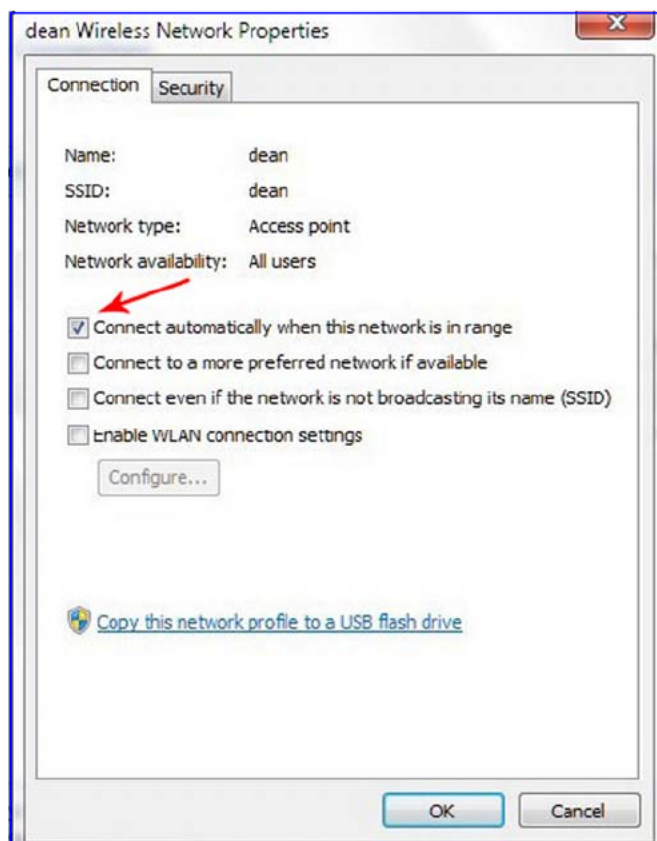
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Disabling Auto Connects

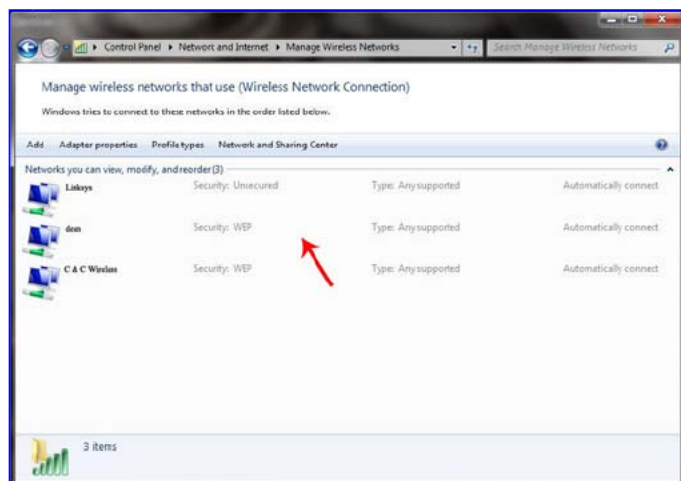
To access the Wi-Fi Profile List and disable the Auto Connects, perform the steps below.

The following screen appears when the “Save Changes” button is clicked in Step 4 above.

Step 1 - Click on “Manage Wireless Networks” to access the station’s Profile List.



Step 2 - To disable the Auto Connect option on a network, click the desired network (In this example “dean”).



Step 3 - Deselect “Connect automatically when this network is in range”. Click “OK”. Repeat steps 2 and 3 for any other network set for auto connect (except for “trusted networks” such as your home network).

(See “Page” graphic upper right)

Step 4 - Go back to the desktop and enable the station’s Wi-Fi. Click the Wi-Fi icon and then click the “Connect” button for the desired network shown in the “Available Networks” list. Do not tick the “Connect Automatically” box. Doing this will re-enable the network in the Wi-Fi Profile List for auto connects.

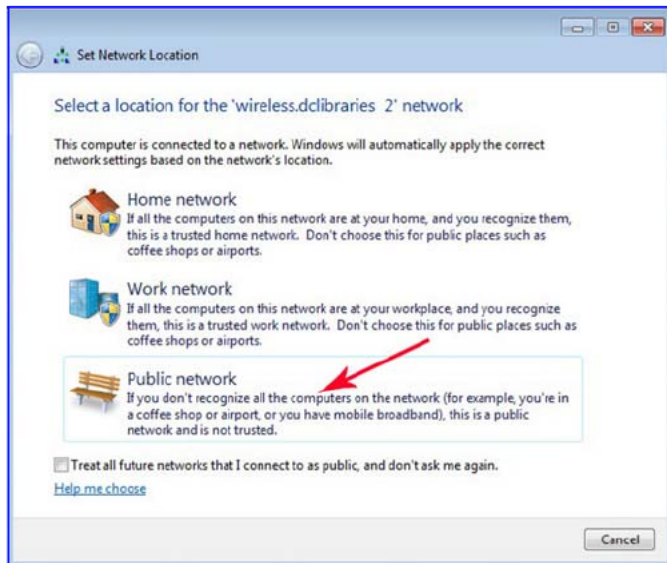


Security tip – Before connecting to a hotspot Wi-Fi, verify the SSID with the Wi-Fi provider to insure that you are connecting to a valid network. For example, airports and most coffee shops will normally display their network SSID.

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Step 5 – Click on “Public Network”. This not only increases Firewall security settings but also activates the settings chosen earlier. Windows 7 will then connect to the network.



Part 4, of this document will discuss configuring a Windows XP station for secure hotspot operation.

YOU NEED TO KNOW

Have you checked out the DRC website lately? If not you need to log on and do it as soon as you can. In short, it has a new look and lots of great information. Oh and by the way the Denver Radio Club newsletter is now on www.W0TX.org too. All you have to do is go to the website; find the link; agree to the copy right statement and you can go back in time to the start of the new RoundTable in August 2007. Have fun.

TSA NEWS

By Bob Z – KB0BZZ

On Friday, November 4th, The Salvation Army's (TSA) Western Territory Headquarters (THQ) initiated a radio exercise linking TSA Division Headquarters (DHQ) in Colorado, Arizona, and across California. The exercise was designed to simulate conditions in the Southwest Division (SWD) (Phoenix) after a dirty-bomb rendered all infrastructure communications inoperable. THQ coordinated the effort and simulated dispatching mass feeding resources from across the Western Territory in support of the SWD.

DRC invested a significant amount of technical expertise, equipment and effort last year to get the TSA's SATERN ham station up and operating. I'm pleased to report that the station allowed TSA Intermountain DHQ in Denver to not only participate in the exercise, it also allowed Territory Headquarters (THQ) in Long Beach to pass traffic to DHQ's in California and Arizona with the Denver DHQ relaying traffic. Interestingly, there were two DHQ's in California that the THQ in Long Beach was unable to talk with directly and they relied on our station for relays.

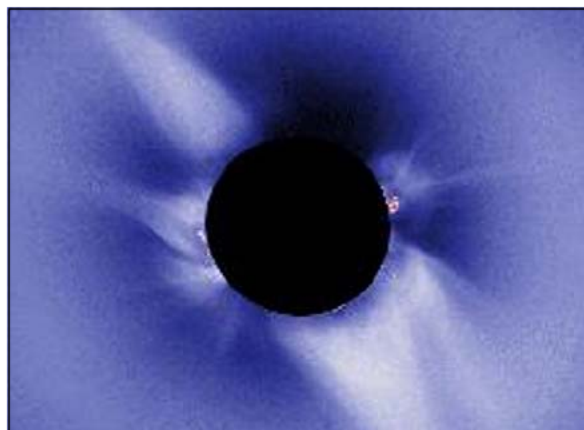
Hats off to the DRC Team that designed, engineered, and implemented the station and R7 antenna. "It works great!!"

SOLAR NEWS

Part 1

The Coronal Heating Process

The Sun's outer atmosphere the Corona is hotter than 1,000,000°C (1,800,000°F) while the visible surface has a temperature of only about 6000°C (10,000°F). The nature of the processes that heat the corona, maintain it at these high temperatures, and accelerate the solar wind is a third great solar mystery. Usually temperatures fall as you move away from a heat source. This is true in the Sun's interior right up to the visible surface. Then, over a relatively small distance, the temperature suddenly rises to extremely high values. Several mechanisms have been suggested as the source of this heating but there is no consensus on which one, or combination, is actually responsible.



DRC EDUCATION CHAIRMAN NEEDED

The Education chair is responsible for making sure we have a presentation each month at the club's Elmer session. The chairman doesn't need to present at every session but needs to make sure there is a presentation.

If you are interested, or would like to nominate someone who you feel would be good for this assignment, please contact Bryan, KBØA



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The jackets are Black with Grey fleece lining and are embellished with Your Name & Call Sign on the left chest and the DRC logo centered on the back.

Still just \$60.00 plus applicable taxes (until January 1, 2012).

Call or email Doug (N4ATA) with your Name, Call Sign and size of jacket size. Phone: (303) 922-3305

Email: jtbembsvcinc@comcast.net or N4ATA@comcast.net

(Please, put DRC Jacket in subject line)

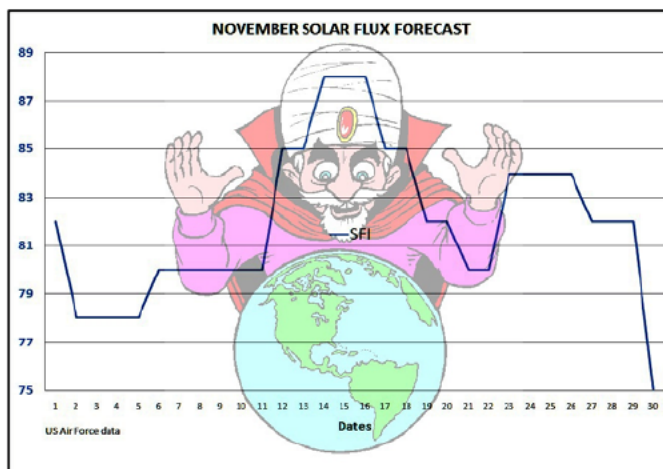
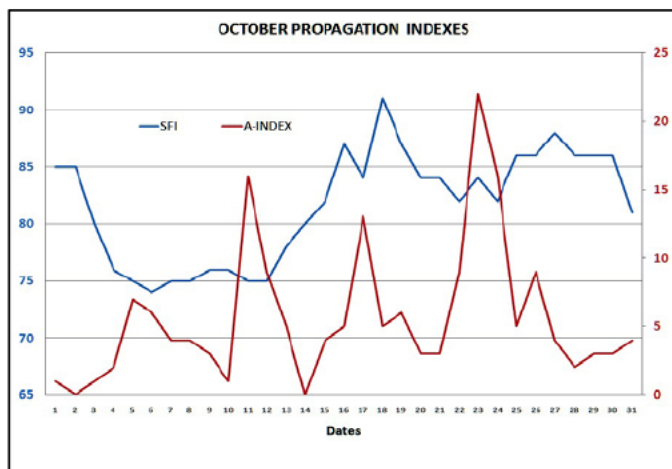
PAST & FUTURE PROPAGATION CONDITIONS

By Bill – W6OAV

This article provides two charts: the propagation conditions for last month and a forecast for this month's propagation conditions.

USING THE PROPAGATION INDEX CHART

Note two things on the chart: the trend of the SFI and A indexes and the date of largest SFI peak. The trend of the SFI shows the progress of the solar cycle during the past month. The SFI peak allows the rough forecasting of the reoccurrence of SFI peak in the next month. In order to "forecast" the next SFI peak, note the date when the SFI peak occurred and project out to about 28 days. Due to the sun's 28 day rotation, the SFI peak will often reoccur in about 28 days. The reason is because the sun spots causing the SFI peak move with the sun's rotation and face the earth every 28 days. This 28 day repetition will become more pronounced as the solar cycle improves. Refer to the September 2010 Roundtable for more complete information on the "SFI" and "A" indexes.



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It's Time Once Again For The Annual Holiday Meeting & Dinner

When: December 21th

Where: Golden Corral Buffet Restaurant

3677 South Santa Fe Drive

Sheridan, CO

Time: 5pm Dinner / 6:30pm Presentation and Drawing

For map & directions check www.w0tx.org

December 2011						
DRC Net Sunday's at 8:30pm Local on 145.490 & 448.625 (No PL)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2 ARRL 160m Contest Begins 2200U 	3
4 ARRL 160m Contest Begins 1600U	5	6	7 Learning Net 7:30pm Pearl Harbor Remembrance Day	8	9	10 ARRL 10m Contest Begins Saturday 0000U 
11 ARRL 10m Contest Ends 2359U	12	13	14 Learning Net 7:30pm	15	16	17 Wright Brothers Day 
18 ARRL Rookie Roundup 1800U thru 2359U 	19	20	21 Club Holiday Dinner & Meeting 5pm	22 <i>First Day of Winter</i>	23	24 
25 	26 	27	28 Learning Net 7:30pm	29	30	31 New Year's Eve

DRC BOARD OF DIRECTORS

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RT Editor	AG0S	George McCray	303-751-7246	AG0S@arrl.net
Education Chair		Open		

DRC REPEATERS

BAND	Freq / Shift / PL Tone	Additional Information
6m	53.090MHz (-1mHz)	
Packet	145.05mHz<>14.105mHz	
2m	145.490mHz (-) 100Hz PL	Linked to the 70cm - 448.625mHz machine. Sunday Net at 8:30 pm local
2m	147.330mHz (-) 100Hz PL	Local Area, Members Auto-Patch Does Not TX a PL!
2m	147.330mHz (-) 131.8Hz PL	NE Area Remote Does Not TX a PL!
1.25m	224.380mHz (-) 100Hz PL	
70cm	447.825mHz (-) 100Hz PL	Saint Anthony's
70cm	448.625mHz (-) 100Hz PL	Linked to the 2m - 145.490mHz machine. Sunday Net at 8:30 pm local
70cm	449.350mHz (-) 100Hz PL	Wide area coverage with Echolink Node # 4140.

EDITOR'S NOTE

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DRC members - this is your newsletter. If there is something which is club or amateur radio related that you'd like to see as a regular feature, email suggestions to the editor. Members are the heart and sole of The Denver Radio Club, if you have an expertise or an interest in a particular segment of ham radio that you'd like to write about, you may email your submissions to AG0S@arrl.net. Submission deadline is the 25th of the Month. **Editor**